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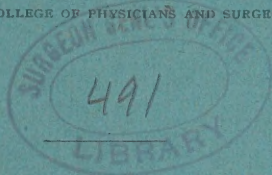
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IS IT DESIRABLE AND PRACTICABLE IN MEDICAL SCHOOLS TO TEACH METHODS OF INVESTIGATION IN MEDICAL LITERATURE?

BY

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IS IT DESIRABLE AND PRACTICABLE IN MEDICAL SCHOOLS TO TEACH METHODS OF INVESTIGATION IN MEDICAL LITERATURE?

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READERS of American medical journals and medical books complain of the low literary standard of the majority of writers. Two-thirds of the bulk of our professional periodicals are devoted to avowed advertisements, while the reading pages are given up to articles frequently without literary excellence and of questionable motive. It may not be out of place to describe a recent effort undertaken to prepare a class of medical students to write intelligently on any medical subject.

This class consisted of thirty-six men, seven of whom had received the Bachelor's degree from reputable literary institutions, and one of the thirty-six had the Doctor's degree from one of the best Eastern universities. Of the others, eight read one language beside English, and four read two foreign languages. The German, French, Italian, Spanish, Scandinavian, and Russian languages were read by different members of the class. More than half the class were able to read without difficulty in at least one foreign language. There was no case of remarkable

illiteracy in the class, and few of its members made any of the more flagrant infractions of the laws of grammar and rhetoric. All were eager, honest students, seeking for medical instruction and not for a diploma alone, as their presence in the class during the optional summer course sufficiently testified.

My own acquaintance with the class was intimate. My knowledge began with their preliminary examination, and was continued in a constant oversight during two previous years. It was furthered by one course of lectures to them, two examinations in bacteriology and six written exercises on the current surgical course. A large part of the class had studied composition for the sake of composition, while a few only held the labor of composition in contempt, and no amount of assistance or friendly criticism could arouse these few to an application of the importance of a study of purity and clearness.

The object of the course was to assist those men that were already able to write English clearly and forcibly, to write on familiar medical subjects with a mastery of the existing literature.

A lecture was first given, designed to show the material of medical literature. In order to make the impressions more vivid and lasting, copies of the various serials were passed around the class for inspection. In this way especial attention was called to those great fountains of medical thought, such as the *American Journal of the Medical Sciences*, the *Lancet*, *Virchow's Archiv*, and the principal weekly journals of the United States. The more classical text-books were also described, and copies

not familiar to the class were exhibited, and the method of consulting them was pointed out. One or two examples of systematic or encyclopedic medical storehouses, such as *Ziemssen's Cyclopedia* and the *Deutsche Chirurgie* of Billroth and Lücke were also exhibited and examined with reference to their future use.

With this limited survey of the material of medical literature my next effort was to show where and how this material could be consulted. The fact was pointed out that there were but five general medical libraries in the United States, and that all exhaustive work in medical literature must, for the present, be done in these five places. Attention was called to the library of the Surgeon General's office at Washington, because of its completeness, and to the Newberry Library, because of its nearness. Through the courtesy of the medical librarian of this library, Dr. G. E. Wire, these exercises were held in the lecture-room of the library, and all the material of the library was placed at our disposal, and every assistance offered for study. The method of indexing the library was briefly described, and each student was required to make the cards for at least one book, with cross-references. The use of the card-catalogue was then explained, and each man was required to pick out references on one subject.

This done, a full account of the method of literary research was given, with much stress laid upon *exact and permanent* notes. A lot of properly shaped tablets and covers were distributed, and every man was exercised in note-taking. All criticisms were made openly before the class, and after

the criticism a rewriting was required when indicated. Thus, many of the technical difficulties were overcome before more serious difficulties were met.

When these preliminary studies were completed, those aids to literary research most complete and manageable were described and studied. First the *Index Medicus* was examined, and the plan upon which it is arranged and indexed was carefully studied. Each student had a bound volume of this serial before him. When a general idea of this work had been obtained and one subject looked up as an example, a series of subjects for theses previously arranged was distributed, and one subject, known to be not too liberally represented in the literature, was assigned to each student for a serious effort, and work was begun in earnest. The subjects were all in the line of the work required in the courses being pursued by the men to whom they were given.

When each man had consulted each volume of the *Index Medicus* and had made a list of all the references to the literature that he could find, a week was given for study. Students were advised to follow some such order as the following in preparing the theses:

1. Read the subject in text-books.
 - (a) Anatomic. (b) Pathologic.
 - (c) Clinical. (d) Historic.
2. Read the subject in encyclopedias.
3. Read the references in the serial literature.
4. Cast the thesis from the notes taken in the reading.

Again the class had the help of the librarian, Dr.

Wire, in solving the difficult problems which come to the beginner in the course of such a study. Many of the articles referred to were not accessible ; many were not valuable when found, and some were difficult to utilize. A sufficient interest was, however, aroused to secure results far above that of any previous class-work that it has been my fortune to observe. Some men did their work thoroughly and exactly ; others imitated exact work, but produced soulless stuff ; while a few failed entirely after collecting with great labor an unmanageable mass of material.

At our next meeting three essays that had been completed were read one after the other before the class, and criticised openly by all. Other finished essays were retained by their writers because by this criticism they saw how to better them. A few who had done the work in the library, and were unable to cast their notes into a thesis, from lack of motive or skill in such work, were assisted by me and by members of the class who volunteered to help.

In addition to the *Index Medicus* and its supplement, the *Catalog of the Library of the Surgeon-General's Office*, similar instruction was given in the use of *Virchow and Hirsch's Jahresbericht*, *Schmidt's Jahreshücher* and the *Archives Générales de Médecine*, and when the subject suggested it, to similar publications in limited fields, such as *Baumgarten's Jahreshuch*, *Centralblatt für Bakteriologie* and allied publications. For the sake of simplicity, however, much was left to availability and individual needs.

Two weeks later all the theses were handed in to me, together with all the notes and references. This was

done so that not only the end-result of the study could be considered, but the method of work could be criticised.

If there were a medical journal for medical teachers alone it would be worth while to publish one or two of these essays, but space and the time of the general reader are too valuable to permit it here.

Many members of the class spontaneously expressed themselves as greatly pleased at discovering this new field of which they had before only indistinct conceptions. A few have continued their studies and are trying to get an exact and comprehensive idea of medical literature, hoping to be able to do better work next year and after graduation. One man said that he never before appreciated the poverty of the medical curriculum or the absurd brevity of the ordinary course. He said that he saw, as he never had before, the need of the most liberal preparation for the study of medicine and the helpless condition of the unprepared to get the value and enjoyment from medical study which it affords.

This first experiment in teaching methods of thesis-making in medicine, though incomplete in many respects, satisfied me that the teaching of correct methods in literary investigation to our average medical student is perfectly practicable. It satisfied me that while the conservative bias for which medical students have frequently been reproached may lead many to begin this new subject reluctantly, the evident advantages that are to be quickly obtained arouse an interest and enthusiasm in

almost every one sufficient to overcome the discouragements of a polyglot literature and an incomplete library. I can unhesitatingly and positively recommend that such a course be made an integral part of the curriculum of every medical school that aspires to be known for its means of education and culture.

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